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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* GEORGE BOKISA, WILLIAM E. ECKLES, and ROBERT E.  
FRISCHAUF

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Appeal 2009-005152  
Application 10/772,473  
Technology Center 1700

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Decided: January 29, 2010

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Before BEVERLY A. FRANKLIN, LINDA M. GAUDETTE, and  
JEFFREY B. ROBERTSON, *Administrative Patent Judges*.

ROBERTSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of pending claims 1-13, 15, 23, 24, and 26-29. (Final Rejection mailed December 13, 2006, "Final," 2-3; Appeal Brief filed July 30, 2008, "App. Br.," 2). We have jurisdiction pursuant to 35 U.S.C. § 6(b).

We AFFIRM.

## STATEMENT OF THE CASE

Appellants describe a method of electroplating an alloy including nickel, cobalt, and boron that has a mirror bright deposit and a hardness on par with chrome. (Spec. 2, ll. 3-13). Claims 13 and 26, reproduced below, are representative of the subject matter on appeal.

13. The method of claim 11, wherein the sulfur containing brightener is a sulfo-betaine brightener.

26. A method of electroplating an alloy comprising nickel, cobalt, and boron comprising:

providing an electroplating bath comprising an anode, a cathode, water, ionic nickel, ionic cobalt, an amine-borane compound selected from the group consisting of dimethylamine borane, t-butylamine borane, and hydrates thereof, and at least one acetylenic brightener, the electroplating bath has a pH from about 3 to about 5 and a temperature from about 30 °C to about 80 °C; and

applying a current to the electroplating bath whereby the alloy comprising nickel, cobalt, and boron forms on the cathode.

(App. Br. 21, 23, Claims Appendix).

## THE REJECTIONS

The Examiner separately rejected claims 1-8 and 23; claims 9-12, 15, and 24; and claims 26-29 under 35 U.S.C. § 103(a) as being unpatentable over Kunishi (JP 10-245693 published Sep. 14, 1998<sup>1</sup>) in view of Passal (US

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<sup>1</sup> The Examiner refers to the JPO Machine Translation and the English abstract in the Examiner's Answer (Ans. 4-5). Appellants have not challenged the accuracy of the Machine Translation or the English Abstract. Therefore, all references to Kunishi are by way of the Machine Translation and English Abstract of record.

3,697,391 issued Oct. 10, 1972). The Examiner rejected claim 13 under 35 U.S.C. § 103(a) as unpatentable over Kunishi in view of Passal, and further in view of Ramznauskene (SU 1544847 A1 published Feb. 23, 1990<sup>2</sup>).

The Examiner found that Kunishi discloses the recited electroplating method with the exception of at least one acetylenic brightener. (Examiner's Answer entered April 2, 2008, hereinafter "Ans.," 5-6). The Examiner found that Passal discloses pyridinium salt brighteners in electroplating applications, similar to Kunishi, where Passal discloses combinations of brighteners including pyridinium, acetylenic, and sulfur containing brighteners. (Ans. 7 and 9). The Examiner concluded that it would have been obvious to modify Kunishi's electroplating bath to include at least one acetylenic brightener and at least one sulfur containing brightener because the addition of acetylenic brighteners results in a brilliant, well-leveled, and ductile deposit. (Ans. 7-9).

Appellants contend that neither Kunishi nor Passal disclose ternary alloys as recited in the claims. (App. Br. 6-7). Appellants argue that the effect of different components on the successful performance of electroplating is unpredictable, and there is no teaching in either Kunishi or Passal to select the brighteners or ternary alloys recited in the claims to improve electroplating in order to obtain a mirror bright finish. (App. Br. 7-10, 12-15). Appellants contend that the Examiner does not sufficiently identify what "best results" are obtained by combining the brighteners of Kunishi and Passal. (App. Br. 12).

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<sup>2</sup> All references to Ramznauskene are by way of the English Translation of record.

## ISSUES

Have Appellants shown that the Examiner reversibly erred in determining that: (1) Kunishi and Passal would have suggested the ternary alloy recited in the claims; and (2) Kunishi and Passal would have suggested a method of electroplating an alloy including the acetylenic brightener recited in the claims?

Have Appellants shown that the Examiner reversibly erred in determining that Ramznauskene discloses sulfobetaines as recited in claim 13?

## FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

1. Kunishi discloses nickel alloy electroplating baths including nickel salts and other salts including boron and cobalt. (Kunishi, para. [0007]).
2. Kunishi discloses boron compounds including dimethylamineborane. (Abstract).
3. Kunishi discloses quaternary ammonium brighteners in the form of pyridinium chlorides. (Kunishi, para. [0007]; claim 1).
4. Kunishi discloses that the electroplating bath has a pH of from 3-10. (Kunishi, para. [0009]).
5. Passal discloses an electroplating bath comprising a primary brightener, where primary brighteners include pyridinium chlorides and acetylenic brighteners. (Col. 3, ll. 3-23).

6. Passal discloses that combinations of any two compounds from the primary brightener class may be used and discloses specific examples with both a pyridinium chloride and an acetylenic brightener. (Col. 4, ll. 8-17; Examples 5-8).
7. Passal discloses that combinations of primary brighteners with secondary brighteners provide “optimum deposit luster, rate of brightening, leveling, bright plate current density range, low current density coverage, etc.” (Col. 3, ll. 26-31).
8. Ramznauskene discloses an electroplating bath including “betaine 2-(4-pyridyl)-ethanesulfonic acid.” (Translation, page 2).

#### PRINCIPLES OF LAW

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (“On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.”) (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

The prior art must be considered as a whole, including non-preferred embodiments disclosed therein. *See Merck & Co., Inc. v. Biocraft Laboratories, Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) (quoting *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976)).

During examination, claims terms must be given their broadest reasonable construction consistent with the Specification. *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007). Although claims

are interpreted in light of the specification, limitations from the Specification are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993). “[A]s applicants may amend claims to narrow their scope, a broad construction during prosecution creates no unfairness to the applicant or patentee.” *Icon Health and Fitness*, 496 F.3d at 1379 (citation omitted).

### ANALYSIS

Although listed under separate grounds of rejection, the Examiner rejected all independent claims 1, 9, and 26 over the combination of Kunishi in view of Passal. Appellants’ arguments focus on features common to all of the independent claims. Appellants present additional arguments for claim 26 and separate arguments for the rejection of claim 13. Accordingly, we confine our discussion to appealed claims 13 and 26, which contain claim limitations representative of the arguments made by Appellants pursuant to 37 C.F.R. § 41.37(c)(1)(vii).<sup>3</sup>

We are unpersuaded by Appellants’ arguments that Kunishi and Passal fail to suggest the recited ternary alloys. (App. Br. 6-7). As the Examiner points out, the references are not limited to the examples disclosing binary alloys, and Kunishi discloses nickel alloys containing combinations of materials that would include ternary alloys containing nickel, cobalt, and boron. (Ans. 13-15; FF 1 and 2). Appellants have not provided a persuasive reason why such combinations would not include the ternary alloys as claimed. In addition, Kunishi expressly discloses the

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<sup>3</sup> Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2009).

dimethylaminoborane recited in the present claims, which would be expected to incorporate into the alloy via the same mechanism as described by Appellants. (*See* Ans. 19; FF 2). Therefore, Appellants' arguments that the boron disclosed in Kunishi is derived from boric acid, which does not result in appreciable platable boron are not persuasive. (App. Br. 6-8).

We are also unpersuaded by Appellants' arguments that there is no reason to combine the pyridinium brighteners disclosed in Kunishi with acetylenic brighteners disclosed in Passal. (App. Br. 12-14). Passal expressly discloses combinations of pyridinium and acetylenic brighteners with a secondary brightener, and that the combinations of brighteners provide optimum rates of brightening. (Ans. 26-27; FF 5-7). Thus, Passal provides a clear suggestion to add an acetylenic brightener and a secondary brightener to the electroplating bath of Kunishi containing a pyridinium brightener. We also agree with the Examiner that the structural similarity between the pyridinium brighteners of Kunishi and Passal would have provided a reasonable expectation of success in adding the acetylenic brighteners of Passal to the pyridinium brighteners of Kunishi. (Ans. 26-28). Accordingly, the evidence of record weighs in favor of the Examiner's position rather than Appellants' arguments that the behavior of the acetylenic and secondary brighteners disclosed in Passal in the electroplating baths of Kunishi would have been unpredictable.

Appellants additionally argue that one of ordinary skill in the art would not have applied a pH range of 3-5 recited in claim 26 in an electroplating bath containing dimethylamineborane because Kunishi discloses an example containing dimethylamineborane at a pH of 6. (App. Br. 17). However, Appellants have not directed us to any persuasive



evidence to support their argument that the pH in Kunishi was selected in order to minimize hydrolysis of dimethylamineborane. Thus, we agree with the Examiner that Kunishi is not limited to the examples and in disclosing a pH range of 3-10, encompasses the range recited in the claims. (Ans. 33).

Appellants contend that Ramznauskene fails to disclose a sulfo-betaine brightener in accordance with the structural formulas recited in the Specification. (App. Br.16). However, claim 13 does not recite any structural formulas, only a “sulfo-betaine brightener.” Thus, to accept Appellants’ argument would require impermissibly reading limitations from the Specification into the claims. Ramznauskene expressly requires a betaine of 2-(4-pyridyl)ethanesulfonic acid. (Ans. 33, FF 8). Accordingly, Appellants’ argument is not persuasive.

## CONCLUSION

Appellants have failed to demonstrate that the Examiner reversibly erred in determining that: (1) Kunishi and Passal would have suggested the ternary alloy recited in the claims; and (2) Kunishi and Passal would have suggested a method of electroplating an alloy including the acetylenic brightener recited in the claims.

Appellants have failed to demonstrate that the Examiner reversibly erred in determining that Ramznauskene discloses sulfobetaines as recited in claim 13.

## ORDER

We affirm the Examiner’s decision rejecting claims 1-13, 15, 23, 24, and 26-29 under 35 U.S.C. § 103(a).

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Application 10/772,473

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. §1.136(a)(1)(iv).

AFFIRMED

rvb

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